

ABSTRACT OF THE DISCLOSURE

Using a solid immersion lens (SIL) 1 having a spherical lens surface 10 with a radius of curvature R_L from a material having a refractive index n_L , an image of a sample 2 is observed. In this sample observation, a geometric aberration characteristic caused by the SIL 1 is evaluated by using a predetermined optical system. Using a coefficient k ($0 < k < 1$) set so as to satisfy a condition where the average image surface becomes flat or a condition yielding a favorable chromatic aberration characteristic, the sample is observed with the solid immersion lens 1 while a surface, orthogonal to the optical axis Ax , including a point located downstream of the spherical center C of the lens surface 10 by $k \times (R_L/n_L)$ along the optical axis Ax is employed as a sample observation surface 20. This realizes a sample observation method which makes it possible to observe the image of the sample favorably with a solid immersion lens, and the solid immersion lens.